

Abstract

Electronic time-temperature indicator and logger

This invention covers improved electronic time-temperature indicators with a visual output, and other devices and methods by which the thermal history of a complex material, which may not obey a simple exponential Arrhenius law degradation equation, may be monitored, and the subsequent fitness for use of the tracked material may be quickly ascertained. In particular, the invention discloses a rapidly reprogrammable electronic time-temperature tag that may be easily customized with the thermal time-temperature stability profile of an arbitrary material, using electronic data transfer methods. Using this device, a single, low-cost, generic time-temperature tag may be mass-produced, and then subsequently programmed to mimic the stability characteristics of nearly any material of interest.